

D 102526

(Pages : 14)

Name.....

Reg. No.....

P.G. ENTRANCE EXAMINATION, APRIL 2024

ZOOLOGY

Time : Two Hours

Maximum : 400 Marks

Each question carries 4 marks.

1 mark will be deducted for each wrong answer.

1. Which of the following is an example of a freshwater sponge ?
 - (a) Scypha.
 - (b) Leucosolenia.
 - (c) Spongilla.
 - (d) Euplectella.
2. Which of the following organism have a high capacity for regeneration :
 - (a) Planaria.
 - (b) Ascaris.
 - (c) Sea-pen.
 - (d) Ctenoplana.
3. Which of the following is not a blood-feeding adaptation of leeches :
 - (a) Presence of salivary enzyme hirudin.
 - (b) Presence of suckers.
 - (c) Presence of parapodia.
 - (d) Presence of toothed cutting plates.
4. Which of the following are the characteristics of echinoderms ?
 - (a) Presence of parapodia, nephridia and vermiform body.
 - (b) Presence of cuticular exoskeleton, jointed appendages and malpighian tubules.
 - (c) Presence of pedicellaria, madreporite, tube feet and ambulacral system.
 - (d) Presence of mantle, shell, radula and statocysts.
5. Vector of Yersinia pestis which causes plague :
 - (a) Culex mosquito.
 - (b) Rat fleas.
 - (c) Sandfly.
 - (d) Human louse.

Turn over

6. Tunicin is found in :
- (a) Hemichordata.
 - (b) Urochordata.
 - (c) Cephalochordata.
 - (d) Vertebrata.
7. The phylum exclusively with radially symmetrical animals at all stages of their life :
- (a) Porifera.
 - (b) Annelida.
 - (c) Coelenterata.
 - (d) Echinodermata.
8. Which is African lung fish ?
- (a) Protopterus.
 - (b) Neoceratodus.
 - (c) Latimeria.
 - (d) Lepidosiren.
9. Walrus belongs to the order :
- (a) Cetacea.
 - (b) Rodentia.
 - (c) Carnivora.
 - (d) Sirenia.
10. The animal known as "Sea mouse" is _____.
- (a) Hippocampus.
 - (b) Eupagurus.
 - (c) Aphrodite.
 - (d) Arenicola.
11. Radula is found in _____.
- (a) Earthworm.
 - (b) Grasshopper.
 - (c) Starfish.
 - (d) Apple snail.
12. Select the animal showing metagenesis :
- (a) Starfish.
 - (b) Hippocampus.
 - (c) Obelia.
 - (d) Sea Lilly.
13. Select the name of poisonous lizard :
- (a) Phrynosoma.
 - (b) Heloderma.
 - (c) Viper.
 - (d) Crocodile.

14. The organism known as "comb jellies" are belonging to :
- (a) Ctenophora. (b) Coelenterata.
(c) Jelly fishes. (d) Platyhelminthes.
15. Which is not an example for marsupial ?
- (a) Macropus. (b) Oppossum.
(c) Platypus. (d) Wallaby.
16. The flying mammals belonging to the order :
- (a) Primates. (b) Cetacea.
(c) Ornithoptera. (d) Chiroptera.
17. The odd toed mammals belonging to the order :
- (a) Primates. (b) Artiodactyla.
(c) Perisodactyla. (d) Chiroptera.
18. The bird Kiwi belongs to _____.
- (a) Passeriformes. (b) Apterygiformes.
(c) Psittaciformes. (d) Strigiformes.
19. Which among the following is a character of Urodela :
- (a) Presence of two pairs of limbs without tail.
(b) Presence of two pairs of limbs with tail.
(c) Without two pairs of limbs.
(d) None of these.
20. Number of cervical vertebrae in Giraffe :
- (a) 7. (b) 8.
(c) 12. (d) 6.

21. Which of the following statement is true ?
- (a) All chordates are vertebrates.
 - (b) All vertebrates are chordates.
 - (c) Notochordates have a vertebral column.
 - (d) Invertebrates possess a tubular nerve code.
22. Uricotelism is found in :
- (a) Frogs and toads.
 - (b) Birds, land reptiles and insects.
 - (c) Mammals and birds.
 - (d) Fish and freshwater protozoans.
23. Even after attaining sexual maturity, larval characters are retained. It is known as :
- (a) Phylogenesis.
 - (b) Neoteny.
 - (c) Parthenogenesis.
 - (d) Ontogenesis.
24. Temperature changes in the environment affect most of the animals which are :
- (a) Aquatic.
 - (b) Poikilothermic.
 - (c) Desert living.
 - (d) Homeothermic.
25. Identify the chordates in which the notochord persists in the adult :
- (a) Cyclostomata.
 - (b) Lancelets.
 - (c) Tunicates.
 - (d) Bony fishes.
26. Anadromous fish migrates from :
- (a) Sea to freshwater.
 - (b) Freshwater to sea.
 - (c) River to estuary.
 - (d) Deep sea to surface water.
27. Which among the following is not taken into account under the five kingdom classification ?
- (a) Plantae.
 - (b) Animalia.
 - (c) Viridae.
 - (d) Monera.

28. Kingdom protista contains :
- (a) Prokaryotic unicellular autotrophic organism.
 - (b) Prokaryotic multicellular heterotrophic organism.
 - (c) Eukaryotic multicellular heterotrophic organism.
 - (d) Eukaryotic unicellular photosynthetic organism.
29. Name the scientist, who proposed the three-kingdom system of classification :
- (a) Carolus Linnaeus.
 - (b) Robert H. Whittaker.
 - (c) Carl Woese.
 - (d) Ernst Haeckel.
30. Under the current system of classification, hierarchy of seven basic categories used. Choose the correct sequence of hierarchies :
- (a) Kingdom-Phylum-Class-Order-Genus-Species-Family.
 - (b) Phylum-Kingdom-Order-Class-Family-Genus-Species.
 - (c) Kingdom-Phylum-Class-Order-Family-Genus-Species.
 - (d) Kingdom-Phylum-Class-Family-Order-Genus-Species.
31. Which among the following is not a rule for writing binomial nomenclature ?
- (a) The generic epithet should start with capital letter and specific epithet should start with small letter with a hyphen separating them.
 - (b) All the words in the binomial nomenclature should either be Latinized or should be derived from Latin.
 - (c) Binomial nomenclature may contain description about the organism.
 - (d) The first part of the binomial nomenclature contains the generic name and the second part contains the specific epithet.
32. Maltose is a disaccharide of :
- (a) Glucose and galactose.
 - (b) Glucose and glucose.
 - (c) Glucose and lactose.
 - (d) Fructose and lactose.

33. Which of the following is an example of epimers ?
- (a) Mannose and fructose.
 - (b) Glucose and Ribose.
 - (c) Galactose and Mannose.
 - (d) Glucose and Galactose.
34. Koshland's theory of enzyme action is known as :
- (a) Lock and key theory.
 - (b) Reduced fit theory.
 - (c) Induced fit theory.
 - (d) Enzyme coenzyme theory.
35. This enzyme catalyzes the transfer of a phosphoryl group from ATP to glucose :
- (a) Hexokinase.
 - (b) Phosphoglucose isomerase.
 - (c) Aldolase.
 - (d) Phosphoglucose mutase.
36. The simplest amino acid is :
- (a) Glycine.
 - (b) Alanine.
 - (c) Asparagine.
 - (d) Tyrosine.
37. The term Bioinformatics was coined by :
- (a) J.D Watson.
 - (b) Pauline Hogeweg.
 - (c) Margaret Dayhoff.
 - (d) Frederic Sanger.
38. Which of the following is not a protein sequence database :
- (a) PIR.
 - (b) PSD.
 - (c) SWISS PROT.
 - (d) DDBJ.
39. Phylogenetic relationship can be illustrated using :
- (a) Dendrogram.
 - (b) Databank.
 - (c) Data retrieving tool.
 - (d) Data search tool.
40. Proteomics refers to the study of _____.
- (a) Set of proteins in a specific region of the cell.
 - (b) Biomolecules.
 - (c) Set of proteins.
 - (d) The entire set of expressed proteins in the cell.

41. Which of the following is not a data retrieval tool in bioinformatics ?
- (a) SRS.
 - (b) Entrez.
 - (c) PIR.
 - (d) DBGET.
42. The initial dorsal-ventral axis in amphibian embryos is determined by :
- (a) The point of sperm entry.
 - (b) Gravity.
 - (c) The point of contact with the uterus.
 - (d) Genetic differences in the cells.
43. Cleavage pattern in insects :
- (a) Holoblastic bilateral.
 - (b) Meroblastic discoidal.
 - (c) Holoblastic rotational.
 - (d) Meroblastic superficial.
44. Hensen's node act as an organizer in the embryos of :
- (a) Amphibians.
 - (b) Fishes.
 - (c) Birds.
 - (d) Mammals.
45. Testosterone is secreted by :
- (a) Interstitial cells.
 - (b) Leydig cells.
 - (c) Stromal cells.
 - (d) Pituitary gland.
46. Fast block of polyspermy occurs by :
- (a) Chemo attraction.
 - (b) Acrosomal reaction.
 - (c) Changing potential of egg plasma membrane.
 - (d) Cortical granule reaction.
47. The egg of Birds is ————— type.
- (a) Alecithal.
 - (b) Microlecithal.
 - (c) Mesolecithal.
 - (d) Macrolecithal.

48. The type of cleavage in Chick is _____.
- (a) Superficial. (b) Meroblastic.
(c) Discoidal. (d) Both (b) and (c).
49. The Avian blastula is called as _____.
- (a) Morula. (b) Blastocyst.
(c) Discoblastula. (d) None of these.
50. A primary egg membrane is formed from :
- (a) Ovary. (b) Oviduct.
(c) Ovum. (d) Uterus.
51. G1 stage of a cell contains 8 chromosomes, how many chromosomes will be present in the cell during metaphase 1 ?
- (a) 8. (b) 16.
(c) 4. (d) 9.
52. In a family of 5 children what is the probability of obtaining all boys ?
- (a) $1/64$. (b) $1/4$.
(c) $1/16$. (d) $1/32$.
53. When the activity of one gene is suppressed by the activity of a non-allelic gene, it is known as :
- (a) Pseudo-dominance. (b) Hypostasis.
(c) Epistasis. (d) Incomplete dominance.
54. Second law of inheritance :
- (a) Law of segregation.
(b) Law of dominance.
(c) Law of independent assortment.
(d) Polygenic inheritance.

55. Lack of independent assortment of two genes is due to :
- (a) Recombination.
 - (b) Crossing over.
 - (c) Linkage.
 - (d) Repulsion.
56. The inheritance of ABO blood group illustrates :
- (a) Multiple allelism.
 - (b) Incomplete dominance.
 - (c) Codominance.
 - (d) Complimentary inheritance.
57. The Haemophilia is a _____ inheriting disease.
- (a) Sex linked recessive.
 - (b) Autosomal recessive.
 - (c) Sex linked dominant.
 - (d) Autosomal dominant.
58. The trisomy of 13th chromosome make the disease :
- (a) Downs syndrome.
 - (b) Edwards syndrome.
 - (c) Patau's syndrome.
 - (d) Klinefelter syndrome.
59. Which among the following represent a transition mutation :
- (a) Adenosine to Thymine.
 - (b) Thymine to Cytosine.
 - (c) Cytosine to Guanine.
 - (d) Both (a) and (c).
60. Which is a Sex linked recessively inheriting autosomal disorder :
- (a) Huntington disease.
 - (b) Sickle cell anaemia.
 - (c) Red green colour blindness.
 - (d) Cystic fibrosis.
61. Which is the most abundant type of body tissue in animals ?
- (a) Connective tissue.
 - (b) Muscle tissue.
 - (c) Epithelial tissue.
 - (d) Nervous tissue.
62. Longest muscle in the human body is :
- (a) Gluteus.
 - (b) Sartorius.
 - (c) Stapedius.
 - (d) Trapezius.

63. Podocytes are present in :
- (a) Ribs.
 - (b) Liver.
 - (c) Lungs.
 - (d) Kidney.
64. Which part of the eye dilates and contracts based on the environment :
- (a) Sclera.
 - (b) Cornea.
 - (c) Lens.
 - (d) Pupil.
65. The Organ of Corti is present in :
- (a) Scala vestibuli.
 - (b) Scala tympani.
 - (c) Scala media.
 - (d) None of the above.
66. Greater degree of unsaturation of fatty acids of cell membrane :
- (a) Raises the transition temperature.
 - (b) Lowers the transition temperature.
 - (c) Has no effect on transition temperature.
 - (d) Doubles the transition temperature.
67. Phosphatidylserine residues in the plasma membrane are Located at :
- (a) The outer leaflet of the plasma membrane.
 - (b) Inner leaflet of the plasma membrane.
 - (c) Evenly distributed in the inner and outer leaflet.
 - (d) None.
68. Ribosomes are formed of :
- (a) DNA and RNA.
 - (b) RNA and protein.
 - (c) DNA and protein.
 - (d) RNA and amino acids.
69. Synapsis is defined as the pairing of :
- (a) Acentric chromosomes.
 - (b) Non homologous chromosomes.
 - (c) Any chromosomes.
 - (d) Homologous chromosomes.

70. Which of the following ion has the highest permeability in a resting nerve cell ?
- (a) Na^+ . (b) Cl^- .
(c) I^- . (d) K^+ .
71. Which group of cytokines are released in response to virus infection ?
- (a) Interferons. (b) Monokines.
(c) Lymphokines. (d) Interleukin.
72. Antigen binding sites are present in :
- (a) Fab regions of antibody. (b) Fc region of antibody.
(c) Only in the light chain. (d) Only in the heavy chain.
73. Which substances will not stimulate an immune reaction unless they are bound to a larger molecule ?
- (a) Antigen. (b) Antibody.
(c) Miligen. (d) Hapten.
74. An immunoglobulin is a :
- (a) Carbohydrate. (b) Fatty acid.
(c) Glycoprotein. (d) Protein.
75. T cells can recognise antigens only when presented by :
- (a) B cells. (b) Platelets.
(c) MHC molecules. (d) Epithelial cells.
76. Innate immunity is also known as :
- (a) Specific immunity. (b) Inborn immunity.
(c) Acquired immunity. (d) Adaptive immunity.
77. DNA fingerprinting technique was first developed by :
- (a) Francis Crick. (b) Khorana.
(c) Alec Jeffrey. (d) James Watson.

78. Which of the following technique is suitable for identifying mRNA molecule in a sample ?

- (a) Western blotting.
- (b) Southern blotting.
- (c) Northern blotting.
- (d) Eastern blotting.

79. Ion exchange chromatography is based on the :

- (a) Electrostatic attraction.
- (b) Electrical mobility of ionic species.
- (c) Adsorption chromatography.
- (d) Partition chromatography.

80. The lens in the human eye is :

- (a) Concave.
- (b) Convex.
- (c) Biconcave.
- (d) Biconvex.

81. Sound waves in air are of :

- (a) Transverse waves.
- (b) Longitudinal waves.
- (c) Electromagnetic waves.
- (d) Polarised waves.

82. Which among the following is a spirochaete Bacteria ?

- (a) Streptomyces sp.
- (b) Treponema palladium.
- (c) Spirillum volutans.
- (d) Corynebacterium diphtheria.

83. Bacterial cell wall is composed of :

- (a) Cellulose.
- (b) Chitin.
- (c) Chitin, cellulose or hemicelluloses.
- (d) Peptidoglycan.

84. Plasmodium in its life cycle divides by which of the following method most commonly ?

- (a) Multiple fission.
- (b) Budding.
- (c) Regeneration.
- (d) Binary fission.

85. Shape of coccus bacteria is :
(a) Spiral. (b) Rod.
(c) Round. (d) Comma.
86. In gram staining, iodine is used as a :
(a) Fixative. (b) Mordant.
(c) Solubiliser. (d) Stain.
87. Which of the following global hotspots of biodiversity has the highest number of endemic plants and vertebrates ?
(a) Sundaland. (b) Tropical Andes.
(c) Brazil's Atlantic Forest. (d) Mesoamerican forests.
88. Which of the following statement is not correct ?
(a) Ecosystem is an open system.
(b) Sun is the ultimate source of energy for any ecosystem.
(c) Ecosystem is self-sustaining and dynamic structure.
(d) In an artificial ecosystem flow of energy is not unidirectional.
89. The length of the food chain in an ecosystem is generally limited to 3-4 trophic levels because :
(a) Quality of energy increases from lower to higher trophic levels.
(b) Quantity of energy decreases from lower to higher trophic levels.
(c) Flow of energy is unidirectional.
(d) Quantity of energy increases from lower to higher trophic levels.
90. A Species facing an extremely high risk of extinction in the immediate future is :
(a) Vulnerable. (b) Link species.
(c) Endangered. (d) Rare.
91. Which is not the characteristic of a population :
(a) Natality. (b) Mortality.
(c) Stratification. (d) Sex ratio.

92. Chemical signals passed between members of same species are called :
(a) Pheromones. (b) Hormones.
(c) Waves. (d) Sign.
93. A state of reduced metabolism that occurs in animals living under intense heat is called :
(a) Hibernation. (b) Dormancy.
(c) Aestivation. (d) Exothermy.
94. Territoriality reduces :
(a) Communication. (b) Learning.
(c) Instinctive behaviour. (d) Competition.
95. The golden rice variety is rich in :
(a) Vitamin C. (b) B-carotene and ferritin.
(c) Biotin. (d) Lysine.
96. PCR technique was invented by :
(a) Karry Mullis. (b) Herbert Boyer.
(c) Frederic Sanger. (d) Stanley Cohn.
97. _____ is used to compare variability of two or more than two series.
(a) Mean. (b) Standard deviation.
(c) Co-efficient of variation. (d) Mean deviation.
98. The mean of the data a, a, a, a will be :
(a) Zero. (b) 2.
(c) a. (d) None of the above.
99. A grouped distribution can be represented by :
(a) Frequency polygon. (b) Frequency curve.
(c) Ogives. (d) Histogram.
100. Which of the following is not assisted reproductive technology :
(a) ICSL. (b) GIFT.
(c) ZIFT. (d) IUCD.